REMARKS

Claims 1 and 3-10 are presently under consideration in the present application.

Claims 1, 3, 6, 8 and 10 have been rejected by the Examiner under 35 USC 103(a) as being unpatentable over Ryu, US 6,295,386 in view of Horobin, US 7,106,477. Claims 4 and 5 have been rejected by the Examiner under 35 USC 103(a) as being unpatentable over Ryu in view Horobin as applied to claim 3, and further in view of Sato, US 5,245,440. Also, claim 7 has been rejected by the Examiner under 35 USC 103(a) as being unpatentable over Ryu in view of Horobin as applied to claim 1 and further in view of Ludwick, US 6,226,419. Claim 9 has been rejected by the Examiner under 35 USC 103(a) as being unpatentable over Ryu in view of Horobin as applied to claim 8 and further in view of Fukuda, US 6,624,876. These rejections are respectfully traversed.

The Invention

The present invention is directed to a method for achieving a 1:1 format size or for the geometric calibrating of a feed through scanner or transport scanner that is arranged for scanning a 2-dimentional original and forming an electronic image for subsequent usage in an appropriate information handling system. The scanning device is governed by a number of scanner or device parameters that control the process of making a mapping from the image on paper to a bitmap image in memory. These parameters are mainly determined by the design of the scanning device. However, do to inaccuracies, for example at production, when assembling the device, or due to environmental circumstances, parameters may deviate from intended values. Consequently, the bitmap of a scanned image will not be an exact copy of the original image. The method and apparatus according to the present invention analyze the bitmap image resulting from the test original, derives differences from the intended values and calculates correction values for the respective parameters. Upon correction of these parameters, the conversion process from the image on a page to the image in memory will result in a true mapping, despite differences, in particular, instances of the scanning devices.

The Ryu reference relied upon by the Examiner is directed to a method for calibrating a shutter-type of scanning apparatus by printing a predetermined pattern, scanning the pattern, storing pattern data obtained in this manner, comparing the pattern data with reference data, calculating the amount of image errors and determining the amount of corrections. Accordingly, when a document is scanned, the scanned image is corrected by the stored amount of corrections. However, the method disclosed in the Ryu reference is only operable for a limited class of scanners and the scanner must be provided with a print head that makes the same movements as the scanned head and, the conveyance of a document or a recordable sheet along the preceding direction (please see Fig. 6) has to be forward and backward. This is necessary, first, in order that the printed pattern has a number of lines that are really straight which is obtained by moving the paper forward and backward when printing the pattern. Secondly, after the pattern has been printed, the paper is fed back so as to be able to scan it and to determine the image errors. Clearly, the method disclosed in the Ryu reference only works for a limited class of scanners. In addition, the Ryu reference discloses carrying out a correction each time that a document is scanned in. Thus, the Ryu reference fails to teach carrying out once, an all time correction of a parameter and also fails to teach a correction of a mechanical parameter as well as failing to teach correcting a zoom factor. In fact, the Examiner recognizes these deficiencies in the Ryu reference on page 4 of the Office Action letter wherein the Examiner states that the Ryu reference fails to teach utilizing a zoom factor in the transport direction, wherein the test original contains a leading edge and comprises two sides of at least one marking in known parallel displacement and parallel with the leading edge wherein the method comprises a correction value for the zoom factor based on the actual parallel displacement of the two sides in the electronic image. In view of these deficiencies, the Examiner further relies upon the Horobin reference in an attempt to render obvious the Applicants' inventive contribution.

The Horobin reference discloses, in a digital copier, maintaining conformance of a copied image with an original image, particularly in the aspects of placement of the image relative to the edge of the print sheet, as well as magnification of the printed image relative to the original. The

crux of the method disclosed in the Horobin reference is that a copy of a test chart is inspected by an operator with the reading derived from an inspection of the output sheet being entered into the copying machine. Subsequently, the copier adjusts at least one attribute. The chart is designed in such a way that numbers may be read out from the copy of the chart. Thus, from the teachings of the Horobin reference it is understandable that the reading out by a human being reflects a manual operation which is cumbersome, inaccurate and error-prone, despite the feature of providing a scale, as disclosed as element 102 in Fig. 2 of the reference. In utilizing the teachings of the Horobin reference, it should be realized that since a copy of a test chart is used, it is not possible to discriminate where any deviations that have to be corrected, originate, that is, in the scanner part or in the printer part. Accordingly, it is possible that a deviation originating in the printer path is corrected by correcting a parameter in the scanner path. This, of course, is detrimental to the good working of the apparatus as a whole, that is, compensating for an error in the apparatus by introducing another error on another location in the apparatus. Also, the method is not suitable for use for a scanner that is used for scanning to a file, since the method disclosed in the Horobin reference allows a deviation in the scanner path to be corrected by a compensation in the printer path. The image that will be stored in a file is then not compensated for. Thus, by using, in the Horobin reference, the copy path for the test chart in the resulting copy of the test chart, all deviations over the entire copy path (including the scanner path and the printer path) accumulate in the copy of the test chart. Since it is not determinable from where a certain deviation originates, this creates an intrinsic disadvantage of the method disclosed in the Horobin reference. Accordingly, consideration of a shuttle type scanner calibration of the Ryu reference in combination with the teachings of the Horobin reference fails to meet the many objectives achieved by the present invention and accordingly, to reject the claims of the present application it is necessary to completely reconstruct the teachings of both the Ryu and Horobin references in view of the Applicants' own disclosure.

Since the Sato patent, the Ludwick patent and the Fukuda patent fail to provide the deficiencies present in both the Ryu and Horobin references, the further reliance upon these references cannot possibly render obvious the Applicants' inventive contribution.

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Accordingly, in view of the above remarks reconsideration of the rejections and allowance of all of the claims of the present application are respectfully requested.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Joseph A. Kolasch Reg. No. 22,463 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Dated: August 13, 2009

Respectfully submitted,

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